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ABSTRACT

This collection of articles provides an overview of some of the recent social science research projects performed by state agricultural experiment stations. The examples highlight social science's contribution to problem-solving in rural business, industry, farming, communities, government, education, and families. The following programs are discussed: (1) the Transition Programming Model, an agricultural budgeting program serving financially struggling farmers in Illinois; (2) California social scientists' efforts to help create farmers' markets in urban areas; (3) a grape and wine-production farm initiated with support from Washington State University; (4) the Wisconsin Experiment Station's survey that helped guide community development in Belleville; (5) community-development studies in other rural areas; (6) a Virginia research study on the effects of educational spending on student performance and economic development; (7) the Texas Assessment Modeling System that projected the impact of a planned coal-fired electricity generation plant in Fayette County, Texas, and surveyed state crop damage in North Dakota; (8) Nevada research that documented the problem of indigent health-care costs for Humboldt County, and helped pass state legislation; and (9) a research study in Missouri examining how farm families cope with changes relating to the national farm crisis--a study that was used by Congress in drafting parts of the Food Security Act of 1985. The document also contains brief descriptions of social science research projects in other states, and numerous black and white photographs illustrate the text. (TES)

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Gene F. Summers
Dept. of Rural Sociology
College of Agricultural & Life Sciences
University of Wisconsin-Madison
Madison, Wisconsin 53706-1562

Social Science Research

Mary Miron, Editor

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USDA, and the Farm Foundation

November 1989

Experiment Station Committee on Organization and Policy (ESCOP)

Social Sciences Initiative Budget Strategy Subgroup

Members

Gene F. Summers, Committee Chair
Dept. of Rural Sociology
University of Wisconsin

Keith W. Bryant, Chair
Dept. of Consumer Economics
Cornell University

Emery Castle, Dean
Graduate Faculty of Economics
Oregon State University

Kinsey Green, Dean
College of Home Economics
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Gerald E. Klonglan, Chair
103 East Hall
Iowa State University

Alex McCalla
Dept. of Agricultural Economics
University of California-Davis

Glenn Nelson
Dept. of Agriculture & Applied Economics
University of Minnesota

Fred E. Schmidt, Director
Center for Rural Studies
University of Vermont

Wayne Schutjer, Associate Dean
323 Agricultural Administration Bldg.
Pennsylvania State University

Richard G. Stuby
Cooperative State Research Service
U.S. Dept. of Agriculture

Barbara Stowe, Dean
College of Human Ecology
Kansas State University

Jacque Voss, Dean
School of Human Environmental Sciences
University of North Carolina

James J. Zuiches, Director
Agricultural Research Center
Washington State University

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Hatch Act, 1887

"It shall be the object . . . of the State agricultural experiment stations . . . to conduct . . . experiments . . . contributing to the establishment and maintenance of a permanent and effective agricultural industry . . . including researches basic to the problems of agriculture in its broadest aspects, and such investigations as have for their purpose the development and improvement of the rural home and rural life and the maximum contribution by agriculture to the welfare of the consumer, having due regard to the . . . needs of the respective States" (PL84-352 69 Stat 671 USC 631 et seq.).

When the Hatch act was passed by Congress in 1887, rural America was dominated by agriculture. Nearly all rural jobs were in farming or farm related businesses. Almost everyone living in the countryside had a hand in farming. You might say America started as a nation of farmers and small towns.

Over the years we constructed a romantic image of farming and country living. Rural people were just plain, old-fashioned, honest folk working the land — good people you could count on to solve any problem. The countryside was a green and pleasant land with lots of sunshine, crisp clean air, and bubbling brooks. It was a place nearly every city dweller would have preferred to live, given a choice. Many of us still dream of living in a small town.

But rural America has changed. Small towns are not what they used to be. It doesn't matter whether we use our dreams or historical fact as the benchmark. They are no longer primarily covered by farms, but most rural people earn a living in services or manufacturing. Two-thirds of farm family earnings come from their income off the farm.

Small towns and their industries are not isolated any more. National and world events affect what goes on along Main Street, at the school, down at the Couthouse, and on the farm. The value of the dollar in world currency markets, the national trade deficit, or the prime rate charged by the Federal Reserve are as likely to be the topic of conversation in small town cafes as Friday night's high school football score.

Most small towns and rural areas are not growing and many are declining. There are fewer jobs and many of them are only part-time or temporary. Unemployment is high, higher than in the cities. Incomes are lower in rural America, with poverty more common than in the central core of large urban areas. And the situation appears to be getting worse.

From 1945 to 1970 rural America saw a major decline in jobs and people. Over 5 million people left their farms and moved to the cities in search of work. The 1970s brought a turnaround. Growth and revitalization of rural communities and economies led to a general optimism about the future of rural America. Communities experienced population growth where decline had been the trend. Manufacturing employment and service sector growth more than offset the continued decline in agricultural employment. There was talk of a "rural renaissance."

The experiences of the 1980s have brought a return of more pessimistic views. Downturns in many of the industries important to rural economies have resulted in near double-digit unemployment, a rise in business failures, fiscal crises in local governments, declining public services, and a renewal of the long-term trend of net outmigration and population declines. The turnaround appears to have turned around again.

To meet these needs of rural America, the State Agricultural Experiment Stations are changing as well. Their research programs are being modified to keep pace with the needs of a changing rural America. Our century old mandate from Congress is "the development and improvement of the rural home and rural life and the maximum contribution of agriculture to the welfare of the consumer." That purpose has not changed. But the research requirements for reaching the goal are becoming more diverse. As rural America has opened its country roads and small towns to nonfarm people and industries, experiment stations have undertaken the sociological and economic research needed by the respective states.

Many of the problems facing rural Americans and small towns are "people problems." The farm crisis of recent memory was a fiscal crisis, not an agricultural productivity problem. It was a social stress crisis as families faced the loss of their farms, livelihood, social standing in the community, and sense of personal worth. Social science research provided the basis for programs to ease the pain and lighten the burden of adjustment.

Rural America faces a serious economic problem. As old jobs are lost, new jobs must be created or attracted from elsewhere. Knowing what is required, where to start, and how to proceed are vital pieces of knowledge. Social science research provides the understanding of economics, local leadership, and community organization that is required.

In 1985 the experiment station directors decided it was time to launch a major effort to address the "people problems" of rural America. Through the Experiment Station Committee on Organization and Policy (ESCOP), a Task Force was created to determine what research was needed and how much it would cost. With Agriculture and Rural Viability in hand, the experiment station directors requested $10 million of additional funds for the FY-1989 federal budget to initiate the neeeded research program. Their first request was unsuccessful, but has been renewed for the FY-1990 and FY-1991 budgets.

State Agricultural Experiment Stations are funding social science research to serve rural America, even without additional federal funds. The research needs are as diverse as they are serious. Working with limited resources, social scientists are carrying on programs of research which serve a broad spectrum of rural people and rural places.

This publication provides an overview of some of the recent research of social scientists in experiment stations. The examples highlight their contributions to problem solving in business and industry, farming, communities, government, education, and families. The stories told here are only a few among many, but they convey the importance of social science research in our efforts to serve rural America.

Our target is a viable and strong rural America in the 21st Century. Social science research investments today can make a difference tomorrow.

James J. Zuiches, Director
Agricultural Research Center
Washington State University

Farming

Computers help farmers plan their future

". . . a farmer can take an existing operation and, given what we think is going to happen, determine what income and net worth is going to be."

For 22 years John and Rachel had worked side by side making a living for themselves and their family by farming the land.

But it was the fall of 1984 and things were different now. John and Rachel understood the ups and downs of farming and they'd been successful. But some wrong decisions a few years ago had slowly eroded their financial stability.

Looking back, they shouldn't have bought that second farm, not with land prices that high. They shouldn't have added on to the herd either, but they needed the cash flow. Now there was too much work and still not enough income. After putting years of their lives into farming, John and Rachel didn't know where to turn.

Should they keep trying to turn their operation around, even though it meant going deeper into debt and possibly losing the farm anyway? Or should they sell out now?

Although John and Rachel are fictional characters, their problems were all too real to many farm families caught in the farm crisis of the 1980s.

Losing their farm, and along with it their home and way of life, seemed devastating enough. But perhaps even worse was not knowing whether to stay in farming or sell out. What would the future hold?

Luckily, for some farmers there were answers. Agricultural economist David Lins and his colleagues at the Illinois Agricultural Experiment Station developed a model for long-range financial planning.

Called the Transition Programming Model, it's basically a budgeting plan. Farmers can identify particular commodities pertinent to their operation and then put in cost of production and price estimates for products sold. Based upon these projections, the model generates a four-year analysis with a balance sheet for each year, including an income statement and cash flow summary.

What did this model mean to the many farmers facing hard choices during the farm crisis? Although no crystal ball, the model did predict a four-year outlook for their farm, helping them to make the decision of whether to stay in farming.

While useful in forecasting, the model could not alter situations; and for some farmers its greatest use was in assisting them and their attorneys in preparing Chapter 12 bankruptcy plans. But even for these farmers, the model served an important purpose in the decision making process necessary for them to put their lives back on course.

During the farm crisis the state of Illinois developed a loan guarantee program to help farmers deal with their financial stress. Originally, the program was set up to provide aid for all of the state's farmers. But by using the long-range model, the state was able to target farmers who would benefit most from the program, saving perhaps millions of dollars in the process.

"Basically, the state was looking for a way to set upper and lower limits so they could determine which farmers didn't need the help and also which farmers were already so financially stressed they were beyond the kind of help this program would provide," Lins explains. "We were able to use the model in working with the Illinois Farm Development Authority to develop these guidelines."

In addition, the model has played a key role in illustrating how federal public policies could influence the financial status of farming operations.

One federal proposal for reduction of price supports would lower the target price for corn dramatically. "All we had to do was run the model with the current target price and then the lower suggested level to show income and net worth over the next four years," says Lins. "From this information, we were able to prepare reports used by groups such as the National Corn Growers to illustrate affects of such proposed policy."

During the farm crisis, the model helped a number of farmers make very tough decisions. Some of them decided to leave farming. Today the model is used more often to help farmers understand their expansion potential.

"That means a farmer can take an existing operation and, given what we think is going to happen, determine what income and net worth is going to be," says Lins. "The model can compare a proposed expansion to the existing operation."

The model is also useful for farmers considering a cutback in part of their operation. The analysis will give them an idea of how such a change will affect their income.

Lins is quick to point out that while this model is widely used in Illinois, other states have developed similar models. "It's not the particular model per se that has made such a difference, it's the information provided. The value in such an analysis is that it takes the farmer beyond the immediate situation."

Regardless of how the questions are asked, the model can provide some important answers to farmers. Although they cannot control their futures, farmers can use the model to gain new insight in making decisions for controlling how the future will affect their farms.

Lori Schieldt

Farming

Farmers' markets revitalize city centers

". . . everybody comes out ahead. Farmers and merchants make money, consumers get fresh produce, and everyone feels good about going downtown again."

An empty parking lot beneath a highway overpass. An abandoned row of shuttered buildings near the Salvation Army. A lonely park on the city's edge. These uninviting venues share more than proximity to the centers of three California towns. They each possess in common an alterego that appears twice a week, transforming these dreary spots into bustling, cheerful hubs of commerce. The common bond? Farmers' markets.

On Wednesdays and Saturdays in the above locations in Stockton, Tracy, and Davis, respectively, you can find dozens of farmers and hundreds, sometimes thousands, of customers exchanging cash for crops amid a near carnival atmosphere.

"It's an event, no doubt about it. In Davis, it's the place to be Saturday mornings," says Jason Tyburczy, who should know. He spent many a Saturday morning interviewing farmers, customers, and nearby mechants at each of these markets in the summer of 1981, recording the markets' economic and social influence. According to the results, just about everyone came out a winner.

"Farmers' markets helped revitalize these downtowns," says Tyburczy, a former research assistant at the Center for Consumer Research (CCR) at the California Agricultural Experiment Station at Davis. "Some downtown areas were losing customers to shopping malls outside of town. Farmers' markets, placed in vacant areas near the city centers, brought life back into economically depressed areas. The markets attract people that wouldn't normally be there; people who spend money not just at the market, but also at nearby restaurants and shops."

That summer, Tyburczy, working with CCR director Robert Sommer, systematically documented effects of farmers' markets on the downtown economy by interviewing city officials, merchants, farmers, and customers.

"We surveyed people to see how much they spent at the markets, how far they traveled, and what else they did while downtown," says Tyburczy. "We found that in Tracy two-thirds of the estimated 800 shoppers said they would not have come downtown if not for the market. And half of them said they expected to spend an average of $26 at places other than the farmers' market. That's not an earth-shattering amount of money, but it's a lot more than wouldn've been spent otherwise.

For farmers, these city markets at first offered another place to unload extra peaches, plums, or persimmons. But over the years, the markets became staples rather than stand-bys.

"We started out selling at the Saturday morning market in Stockton in 1979 when it first opened," says Lois Billigmeier, president of the Stockton Certified Farmers' Market Association. "Then we expanded to the Wednesday market, and now we're regulars at five certified farmers' markets each week.

"Pretty soon, we started expanding the types of commodities we grew to suit our customers," adds Billigmeier, who farms the 250-acre "B and B Ranch" in Lindon, along with her husband Larry. "They always want to know how fresh our produce is, what types of chemicals we use, how soon the next crop of cherries will be in, things like that. We like the opportunity to talk and deal directly with our customers. They're what keeps us going."

"Many consumers prefer buying produce from the farmers' markets because it tastes better, even though the prices are nearly the same," adds Greg Lawley, direct marketing specialist with the California Department of Food and Agriculture. "Supermarket produce often is picked early, allowing it to ripen en route to the market, which affects the flavor. But at the farmers' market, you're getting produce harvested a day or day and a half ago by the farmer that grew it."

As the demand for fresh produce increased, so did the farmers' markets. Lawley says there were about 30 a decade ago. Today there are about 200, growing at a rate of about 10 more each year.

Though at first farmers' markets offered lower prices to consumers, they eventually equalled middleman prices. This did little to deter shoppers, who still seemed to prefer buying produce fresh from the producer in the flesh than from the store.

"The social contact aspect was a lage factor in people's decision to visit the markets," says Tyburczy. "Nearly everyone commented that it's enjoyable and lively. In one survey, we found for every one interpersonal contact in a supermarket, there were three at the farmers' market.

"These were not nice parts of town, not places you generally would want to go," says Tyburczy. "But the markets changed the public perception of these gloomy areas into festive, pleasant places. And, on top of that, everybody comes out ahead. Farmers and merchants make money, consumers get fresh produce, and everyone feels good about going downtown again."

He adds that the only cost was for insurance, for which each city was more than willing to pick up the tab. Small price for turning urban blight into urban blithe.

Marc Kennedy

Logo promotes sales of farm produce

Over the years, East Tennessee farmers have become successful crop producers. Now their major problem was finding strong local markets. That's where Tennessee Agricultural Experiment Station researchers could offer assistance.

University researchers worked together with Tennessee Department of Agriculture staff to develop a "Buy Tennessee" campaign. They created a logo to identify fresh produce grown in Tennessee and worked with a local supermarket chain which agreed to use the logo in their advertising and on produce in the store.

The result of the marketing effort was a substantial increase in produce sales to large supermarkets.

Cornell project assists farm innovators

Information gathered for the Farming Alternatives Project helps experts give farm innovators sound advice. Researchers at Cornell Agricultural Experiment Station surveyed 167 New York farm-based entrepreneurs.

With the survey data in hand, the researchers could help families identify and evaluate new enterprise options and marketing strategies. Rather than simply dispensing information on specific farming alternatives, the project emphasizes the decision-making process and helps people develop the management and marketing skills necessary for successful farm diversification.

As one of its first activities, the project conducted a series of four workshops for farm and rural families around the state. The workshops featured examples of successful farming entrepreneurs and provided training in basic business planning, management, and marketing to over 300 participants.

Project staff have now developed a handbook for prospective farming innovators. Using the handbook, farmers can evaluate personal and family considerations, available resources, alternative enterprise options, market potential, production feasibility, and cash flow.

Time-of-day electrical pricing cuts Utah irrigation costs

Utah farmers who have adopted a new time-of-day electricity pricing system are slicing their irrigation pumping bills in half.

Jay Andersen, agricultural economist at the Utah Agricultural Experiment Station, proposd the pricing system to help farmers shave their operating costs and turn a profit during a time of depressed farm prices.

A problem began in the 1970s when favorable electrical power rates and strong feed grain and forage prices prompted farmers to increase crop irrigation. By the mid 1980s electrical costs had increased nearly five-fold. Higher production costs, combined with depressed crop prices, had farm operators searching for relief.

That's when Andersen proposed time-of-day pricing, where electricity would be less expensive during off-peak times, such as late at night. Farmers could schedule their irrigation during the off-peak times.

Andersen estimates that farmers have saved several million dollars by using the alternative pricing system and should continue to save in the future.

Portions of Idaho have now adopted a similar time-of-day pricing option. Andersen continues to survey farmers who irrigate to determine their characteristics as well as investigate provisions for tariffs to help farmers achieve peak farm profitability.

Former farmer survey helps ease transition

North Dakotans easing out of farming and into a new career can make a smoother transition, thanks in part to a survey of former farmers conducted recently.

Researchers at the North Dakota Agricultural Experiment Station queried former farmers about a number of topics, including which public or private agencies and programs they used when they quit farming. This information has helped social service agencies, such as the North Dakota Job Service and North Dakota Human Services Departments, target special programs for former farmers. The agencies also used the data to help determine why certain programs were not being used.

Based on their survey, the researchers developed a demographic profile of the former farmer which can be used to better meet his or her needs.

Annual survey charts farm progress

Each year social scientists at the Iowa Agricultural Experiment Station check the pulse of Iowa's

farmers. They accomplish this task via the Iowa Farmer Rural Life Poll, which surveys over 2,000 farmers on everything from stress to low input agriculture.

Paul Lasley, who heads up the survey, summarizes the data and feeds it back to state legislators, county officials, the governor's office, and other policy makers in a position to take action where needed.

The survey was used recently to help the state legislature decide if the time was right to start reversing some of the rulings designed to help farmers through periods of crisis. Data showed this action could be quite damaging to the farmers and legislators decided not to begin dismantling the programs.

Survey results are also used to guide extension program development and are available to other states.

Livestock producers consult computers

Colorado livestock producers got a real boost when the Integrated Resource Management (IRM) program got underway a few years back.

Ranch management faculty at the Colorado Agricultural Experiment Station worked with producer organizations to create the IRM program to steer livestock producers toward the most profitable management options.

The program includes computer analysis, technical advise, and cooperation with the producer.

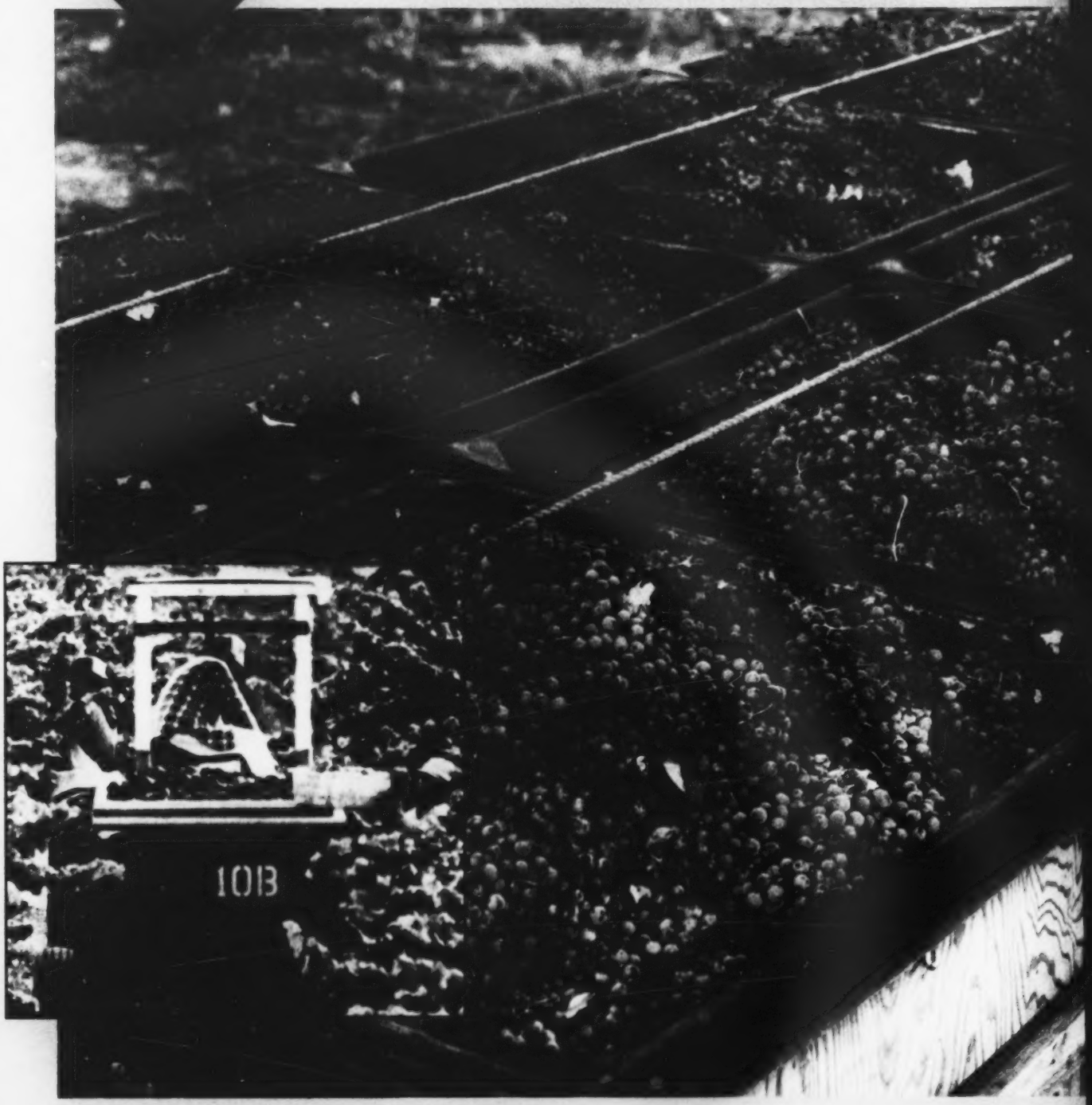
IRM has a growing file of success stories. Here are just a few examples:

- In 1986 one ranch saved $30,000 based on IRM's recommendation to purchase bred replacement heifers rather than raise them.
- IRM provided a financial restructuring plan for a ranch with a pending foreclosure which helped the ranch once again become a viable business.
- An economic analysis done by the IRM program helped a ranch turn around a net loss of $70 per cow to a net profit of $100 per cow in three years. This was done primarily by changing feeding philosophy and sources of feed.

IRM's computer software and method of analysis have been refined so that the program can assist producers throughout Colorado.

Business & Industry

Researchers sow the seed for a new industry



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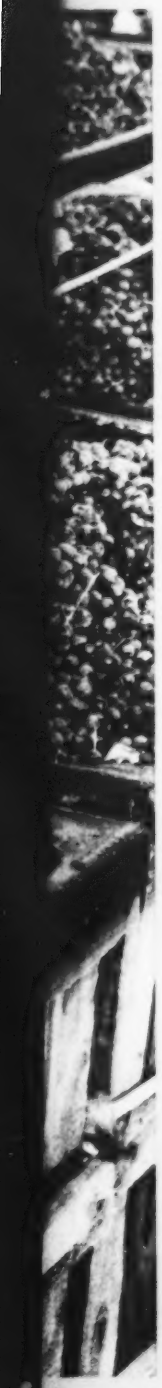
"It might surprise some folks back east if they knew their favorite local variety was upgraded with Washington wine."



Bill Powers can't afford to spend too much time this autumn morning enjoying the view of his land that lies just outside the town of Kennewick in eastern Washington state. It's harvest time, and he's got truckloads of produce to load.

Powers isn't shipping apples; he's loading wine. Bulk wine, in this case, to be blended with eastern varieties that are more acidic, and therefore less palatable, due to a shorter growing season.

"It might surprise some folks back east if they knew their favorite local variety was upgraded with Washington wine," says Powers.

It may surprise many that Washington wines now rank among the nation's best, in taste if not in volume. They're second only to California in the production of premium table wines — chardonnay, reisling, cabernet sauvignon, among others — and hold their own with the Sunshine State in head-to-head taste test competition.

But Washington wine growers don't seem to mind that their state is not synonymous with table wine yet. After all, there was hardly a wine grape grown in the state 20 years ago.

Much of the industry's success goes to the ingenuity, perseverence and salesmanship of a group of Washington Agricultural Research Center scientists who met in January, 1969, to discuss the future of what then was a nonexistent industry. Today, retail sales of Washington table wines have risen to $100 million annually.

When the group of agricultural economists, horticulturists, and food scientists met in Prosser to discuss the feasibility of promoting a table wine industry in Washington, they already knew that it was technically possible to grow wine grapes in the state.

"The question was, could we grow varieties that would produce quality wine that could compete in the marketplace," says Ray Folwell, professor of agricultural economics and one of those in attendence that winter day. "We knew we couldn't grow certain California varieties because they couldn't stand our early freezes. But we also knew we had the right guy on hand to answer that question, Walt Clore."

Clore had been experimenting with growing quality wine grapes in Washington ever since he was first hired by Washington State University (WSU) in 1937. "Mr. Grape," as Folwell calls Clore, tested many types of *vitis vinifera* grapes until he identified several that could withstand the weather and make quality table wine.

Once convinced by Clore and others that it was possible to grow the grapes, the other experts researched and documented the potential for developing a wine grape industry in Washington.

"It was one thing to say, 'yes we can grow the grapes,' but then we had to ask whether this made economic sense," says Folwell. "Should we concentrate on vineyards alone, or should we make our own wine as well? As it turned out, it made sense to gradually do both."

The team also investigated potential markets and the demand for table wine in the U.S. and analyzed the international trade flow of wine. They examined how it would affect the state economy, studied sociodemographic characteristics of those who drank wine and those who did not to effectively develop marketing promotion, product, and pricing decisions.

They found, indeed, there was a market for Washington grapes and wine, and the economic infrastructure existed within the state to support a wine industry. Now all the WSU experts had to do was convince the farmers to grow wine grapes.

"We generated the information but it was up to the farmers to take the risk," says Folwell. "It took a few years for things to get off the ground, but we feel good about how the industry is progressing."

Statistics justify Folwell's feelings. Fewer than 10 farmers were growing wine grapes on less than 100 acres in 1976, producing less than 1,000 gallons. Now, there are 96 vineyards on nearly 11,000 acres, which yield more than 10 million gallons annually.

So far, the wine grape industry has created more than 1,500 full- and part-time jobs, generating an estimated $13 million in annual wages. Every new job in the wine grape industry creates three nonagriculture jobs.

The feeling among growers and scientists alike is that they have just begun to tap the potential of the wine grape industry in Washington. Though three quarters of the wine produced is white, wineries are beginning to produce more red wines.

"Nationally, premium table wine sales are down 5%, while our sales are up 24%," Folwell points out. "I'd say we're doing pretty well."

Twenty years ago, in the tri-city area of Kennewick, Richland, and Pasco, there was not a single winery. Now there are 12 in a 20-mile radius. "That's indicative of the whole business, says grower Bill Powers. We have only 11,000 out of a potential 80,000 acres in grapes now, according to the WSU horticulturists. So we've only scratched the surface regarding wine production in Washington. All in all, I guess I would say that the whole experiment has been an unqualified success." **Marc Kennedy**

Injured worker study benefits workers and their employers

Washington State University (WSU) has a better method of rehabilitating injured employees and at the same time makes the state's worker compensation system more cost effective. These improvements were based on joint research efforts of Washington Agricultural Research Center researchers and state agencies.

A survey of 2,540 previously injured workers revealed the importance of the workers returning to their former employers as quickly as possible after the injury. This factor proved to be far more important to the worker's rehabilitation than the effects of the injury, degree of disability, occupational or educational status, magnitude of the continuing pain, depression or other psychological problems.

Based on results of the survey, WSU implemented a new Risk Management Program. This program helps injured workers return to their previous jobs as soon as possible. Those who cannot return to their former jobs are aided in finding different jobs within the university.

In its first year, this program saved nearly $53,000 in worker compensation costs. This represents an 11% "refund" on the university's annual industrial insurance premium.

Wyoming takes charge

An innovative program called "Wyoming Take Charge" is helping revitalize the state's local economy. Agricultural economists at the Wyoming Agricultural Experiment Station did the research needed to implement the program, which draws on the skills and talents of local residents to help plan and carry out community improvement programs.

One project — the Greybull-Basin Take Chage Council — has served as a prototype for the program. Greybull and Basin are two towns in the northern part of Wyoming, an area hard hit by recent declines in the state's economy.

As a first step toward revitalization, the Take Charge Council began a project to reduce leakage from the area's retail and service sectors. To achieve this goal, researchers helped the Council mount a trade area analysis, survey consumers about their shopping preferences, and implement programs to encourage residents to buy locally.

The success of the program is evidenced by an 11% increase in retail sales after one year. Other Take Charge Councils have implemented similar projects and an extension bulletin is being developed for statewide distribution to help other communities help themselves.

Research helps textile and apparel industries compete

The textile and apparel industries are an important part of the economic base of rural upstate areas of New York. In fact, 78% of New York counties have textile and apparel manufacturing employment. Cornell Agricultural Experiment Station researcher Susan Hester helps these industries remain competitive in the U.S. and worldwide markets. This, in turn, helps to keep New York's rural economy healthy.

Hester's research charts national and international markets in textile and apparel products and closely watches American trade policy. Market shares and cost differentials of the New York State textile and apparel industry are computed and followed through time to spot profitable market niches for both textile and apparel manufacturers in upstate counties.

The Cornell researcher also helps the industries zero in on problems to further development. For example, her research revealed that inadequate labor supply is a major roadblock to textile and apparel industry growth in some upstate rural locations.

Extension education programs help carry the results of Hester's research to local officials and textile and apparel manufacturing businesses in rural communities across the state.

Jetty expansion brings rural county to life

Tillamook is a rural county on Oregon's Pacific coast with a population of about 20,000. In 1977, local officials learned of a plan to increase timber processing in their economically depressed community. Raw lumber would be barged to Tillamook for processing. However, the proposal required a safe harbor year around.

Congress had previously authorized the U.S. Army Corps of Engineers to build a 6,500-ft. south jetty on Tillamook Bay, leaving this jetty 1,500 ft. shorter than the north jetty. The two jetties of unequal length caused siltation and dangerous bar conditions.

Tillamook community leaders asked Oregon Agricultural Experiment Station researchers Russ Youmans and William Rompa to apply an input-output economic analysis model developed at Oregon State University. With help

from local business people and Tillamook County Extension agents, the team gathered the necessary information. The data was then processed through the model, which assesses both direct and indirect impacts of any given action on the local economy.

Results showed that completion of the south jetty would have a $4 million positive impact on the local economy each year.

These results gave community leaders the encouragement and support they needed to request Congressional funding and helped prompt Congress to authorize the money to construct the extension to the jetty.

Local officials report the commercial vessels can now access Tillamook bay two-thirds of the year — an increase of four months. Although the lumber company that planned to expand has since left the area, the jetty extension has helped the fishing industry. A county official says it has increased the economic impact of the fishing industry by one-third.

Community leaders report the jetty expansion made Tillamook Bay a "legitimate harbor." Current plans call for nearly doubling the number of slips in the Garibaldi Boat Basin over the next few years to accommodate both commercial fishing and pleasure boats.

There are fewer deaths due to unsafe bar conditions, more commercial boat owners want to use the bay as home port, and there has been an increase in transient fishing vessels using Tillamook as their summer port.

Homeworking under study

At home work may be a profitable business alternative for many Vermonters, say Vermont Agricultural Experiment Station researchers. Jobs include self employment, traditional marketplace work done in the home, artistic and craft work, or nontraditional farming.

As part of a regional study, the researchers are exploring how at-home working families manage their time, space, and other resources to achieve success in their business, as well as the impact of these businesses on Vermont's economy.

Community

Community surveys guide development

In a pastoral little community named Belleville — set in the green rolling hills of southwestern Wisconsin — there was no doctor, no clinic, and no pharmacy. And the downtown area was mighty shabby. That was 10 years ago. Today, Belleville has several doctors, a clinic, a pharmacy, 17 saplings lining Main Street, strong community pride, and a new sign that says "Welcome to Beautiful Belleville!" What happened in Belleville is, indeed, beautiful.

Thanks to early 1970s Wisconsin Agricultural Experiment Station research pioneered by graduate students Larry Meiller and Glen Broom and Rural Sociology Professor Don Johnson, Belleville and more than 50 other small towns in Wisconsin are becoming aware of what's wrong and what's right in their communities.

According to Meiller, traditional approaches to community planning were not meeting community needs. "We didn't agree that it was useful for planners to ask, 'How do you get citizens to accept the ideas you've planned for them?'," says Meiller, now a professor of Agricultural Journalism at the University of Wisconsin. "We decided to turn this around to help a community survey its needs so it could make its own plans based on the results. This community consensus approach involves surveying community citizens, key community leaders, and elected officials to determine what each group feels are the problems in the community. Results of the

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"The strength of the research is that it involves the people. Community involvement means community ownership."

survey are then presented in the local paper and at a town meeting."

The three groups don't always agree. For example, in Barron County, though all three groups identified economic development as a major concern, citizens said local government was doing nothing to attract industry. But local government said that citizens were apathetic about development of an industrial park because they didn't want to pay for it with their tax dollar. "This kind of information puts tension into a community, and research shows that tension gets communication going. Communication is a precursor to progress," says Meiller.

In Cumberland, surveyed elected officials said the biggest community problem was lake pollution, and the smallest concern was the need for youth recreation facilities. The citizens said just the opposite. As a result, an old gas station downtown was renovated to become a teen center, and the village built a community pool.

In Belleville, there was disagreement between citizens and elected officials when asked to rate how well elected officials handled economic development. Citizens said that the officials were weak and ineffective. Officials rated their own efforts as "great." As a result, citizens and officials formed an economic development committee.

"The strength of the research is that it involves the people. Community involvement means communty ownership," says Don Johnson. He adds, "After we do the original test, we have been asked in several communities, years later, to come back and resurvey."

In Belleville's original survey it was determined that people wanted more shopping opportunities, health care facilities, economic development, and improved appearance of the downtown. Since then, the clinic, the pharmacy, and downtown improvement are just several of many changes made based on survey results. For example, the survey revealed an enormous amount of discontent with the local phone service. One disgruntled citizen sent two pages of negative comments culled from the survey about Belleville's phone service to the Public Service Commission, which, in turn, got an injunction against the phone company. Within one month, Belleville had a new computerized phone service.

"The retest 10 years later," says Dennis Domack, Dane County Community Development Agent, "shows that health care availability is no longer a problem, but that economic development remains a concern."

Waunakee, Wisconsin ("The Only Waunakee in the World" reads the welcoming sign at the edge of this community of 5,000 people), has a similar success story.

Twelve years ago, the community consensus survey revealed that health care was the number one problem. Shopping, concern for elderly, and economic development were also problems.

As a result, Waunakee now boasts two clinics and the resurvey of community problems shows that concerns about health care services has droped from first to 18th place. In addition, an elderly center opened and elderly food programs began. A Chamber of Commerce was formed, and a shopping area called the Village Mall now houses numerous stores.

Even local restaurant owners Pat and Donna O'Malley, who have operated O'Malley's Farm Kitchen since 1976, say, "We're glad to see more restaurants in town. Even though they are competition, people are more likely to stay in town and eat when they have five choices instead of one."

Capitalizing on the German heritage, many downtown businesses have adopted the Bavarian look, and 125 new trees adorn the downtown streets. An industrial park now houses a number of industries that employ hundreds of workers. "Waunakee followed the recommendations of the survey all the way down the line," says Johnson. "The resurvey shows that because of the 35% growth of the community from 1980 to 1986, traffic is now the major concern for this town that doesn't even have one stoplight."

In another community, Fort Atkinson, the survey showed a need for improvements to the primitive airport. The idea of a new airport had been defeated on two previous referendums because citizens believed that airport funding would come from their tax dollar and that the facility would only be a plaything for the rich. Once it was understood that the airport could be built with outside funding and that the airport would enhance local industry, the plan was approved.

What started out as a college term paper became significant social science research that's been helping communities help themselves throughout Wisconsin for a number of years. From Barron County to Belleville, from Cumberland to Waunakee, communities are assessing needs, communicating, growing, and changing. Most importantly, they are working together so they can grow together. **Jeanne Dosch**

Computers match communities and new industry

Communities trying to attract new industries can't afford to waste time and effort courting the wrong businesses. They need to target industries that are most likely to locate and succeed in their area.

A computerized data base developed at the Pennsylvania Agricultural Experiment Station can give individual guidance to 1,100 communities in 13 northeastern states. The system can pinpoint those manufacturing industries that an individual community has the best chance of attracting. It also can rank the community's chance of attracting a particular industry.

"Targeting economic development efforts is necessary in a competitive world," says Bill Gillis, Assistant Professor of Agricultural Economics. "With this data base, communities can target the manufacturing industries that offer them the most potential — those that best match the labor force, transportation, and markets available." The system takes 119 factors into consideration, such as railroad and airline access, distance to major highways, per capita state and local taxes, per capita income, proportion of the population with college degrees, and number of hospital beds.

The system has two advantages for communities. Economic development leaders won't waste time courting industries that aren't likely to locate plants in their area, and they aren't as likely to end up with new industries that quickly fail because of bad location, says Frank Goode, agricultural economist who conducted the research for the data base.

The system includes communities with populations of up to 100,000 and is available through county extension offices. Extension agents in 13 states are being trained to work with economic development and community leaders using the system and giving guidance.

Jobs and income for rural Wisconsin communities

Rural community leaders all over Wisconsin have been looking for strategies they might use to improve jobs and income in their communities. Old strategies based on agriculture and natural resource exploitation and on attracting manufacturing plants proved less effective in the 1970s and '80s.

In 1975, Wisconsin Agricultural Experiment Station agricultural economists Glen Pulver and Ron Shaffer stepped in with a research program which has studied community economic development options, nonmanufacturing industrial potential, industrial location, computerized economic analysis, and the financing of new small businesses. With Sydney Staniforth, they examined commercial and industrial loan behavior of rural banks and the effectiveness of rural capital markets.

Today many rural Wisconsin communities are successfully pursuing more comprehensive economic development strategies. Service industries with sales outside the community and the state are bringing jobs and income to many small towns. Business loan behavior of many rural banks is more favorable to small town entrepreneurs. Wisconsin's banking regulations have been modified to create a more beneficial climate for rural businesses. The Pulver and Shaffer research program has been a significant factor in all these changes.

The influence of the Shaffer and Pulver research program extends beyond Wisconsin to the halls of Congress and to nearly every statehouse in America. Testimony to a variety of Congressional committees, workshops, and lectures across the country, and untold hours of consultation with planners and public officials bring the results of their research to bear on rural development across the country. The rural development policy agendas of both the National Governor's Association and the Council of State Government are shaped by the research of Pulver, Shaffer, and their colleagues.

Population studies inform local leaders

Sociologists at the Population Research Laboratory, Utah Agricultural Experiment Station, manage a wealth of information about the state's population migration trends. This is useful information to state, district, and local planners, as well as interested leaders and planners in the private sector.

An important element of the project has been the development of population, school enrollment, labor force, and household projections for the state, planning districts, and counties.

A portion of the research involved a survey of special service needs of elderly people in two rural Utah counties. With the data gleaned from the survey, district officials and planners have developed programs more responsive to the needs of elderly persons.

The researchers have also tracked migration patterns of Utah's youth in order to better serve this age group. Their findings led to development of curriculum modules and was helpful to high school counselors.

Another portion of the project examined differences in how native

Utah residents and migrants viewed public policy issues. This information helps alert local officials to potential sources of conflict.

Center helps Vermont towns plan for growth

While the rest of the country views Vermont as a rural outpost where time stands still, those familiar with the state have witnessed a steady march of "progress" in recent years. Urban spread, condominiums, ski resorts, shopping malls, industrial parks, and fast-food establishments have all taken their toll on the state.

Can the quality of rural Vermont life accommodate such rapid growth? Communities and planners need information to answer this question.

For over 15 years two units within the Vermont Agricultural Experiment Station have been gathering sociological, demograhic and economic data about the state and region. Dr. Fred Schmidt, at the Center for Rural Studies, University of Vermont, oversees the Vermont Community Data Bank. This repository of statistical information includes national and state census data, voting records, and a myriad of other information. The Center receives 30-35 calls a week and helps planners with sociological and demograhic questions.

Also at Vermont, Prof. Malcolm Bevins, in the Dept. of Agricultural and Resource Economics, specializes in property taxation and tax burden analysis within Vermont communities. He provides planners and others with economic trend data. For example, he can identify changes within a community's tax base and show how the burden of property taxation is shifted.

Government

A sophisticated model peeks into the future

Almost a decade ago, the folks of Fayette County, Texas, needed a crystal ball. In the late 1970s and early 1980s, coal development in this south central Texas county was having an impact on the area's economic development. The Lower Colorado River Authority, a publicly owned utility, was developing a coal-fired electric generating facility in the county.

Local people were stumped. The facility could bring people to their community. Should they gear up for a great swell of population that would soon arrive and build new businesses and schools, hire more teachers and police officers? Or should they take a "wait and see" attitude and do nothing until absolutely necessary? Where was the crystal ball?

They got their crystal ball when rural sociologists from the Texas Agricultural Experiment Station at Texas A&M applied Fayette County's information to their sophisticated Texas Assessment Modeling System (TAMS). Using the model, it was possible to get projections of the socioeconomic impacts the facility would have on the area. The information resulting from the analyses by TAMS was used by Fayette County officials to plan ahead.

Says J.D. Legler, city manager of LaGrange, "We're awfully glad we had the advice of the researchers. They suggested that because the boom could be quite temporary, we should not "beef up" our business. At the same time that we had this new factory coming in and we knew it would employ

The beauty of the model is that it allows the user to easily examine the impact of various scenarios.

about 500 people, our oil activity was going down. As a result, the model suggested that we should not overbuild for the impact and we're really glad we didn't."

Erland Schulze, mayor of LaGrange, agrees, "Thanks to the help from the researchers, we went with the flow. Business people ordered more merchandise, but that was all. The TAMS model basically said, 'watch it . . . this could fall apart.' "

Unfortunately, a nearby community, Giddings, geared up for a boom with so much vigor that profits quickly turned to losses. "Giddings had a terrific oil boom," says Legler, "and they viewed it as permanent. They sunk a lot of money into development. Now that the oil activity is over, businesses and taxpayers are paying the price."

Says Texas A&M rural sociologist Steve Murdock, TAMS helps communities in two very special ways. "First, it helps a community avoid failing to build when what's coming requires more buildings, services, and growth. And second, as in the case of Fayette County, it helps a community know when to avoid overbuilding if needs are temporary."

TAMS was developed by Murdock and colleague Professor Larry Leistritz from North Dakota State University. Simply put, it is a computerized socioeconomic impact projection system that provides projections of economic, demographic, public service, and fiscal conditions in a designated impact region for a 25-year planning horizon. "The beauty of the model is that it allows the user to examine the implications of numerous alternative scenarios with relative ease," says Murdock. "For example, if we want to know the impact if twice as many people move into a community as originally predicted, we enter data and learn the impact on everything from population to police officers."

The model was extremely useful to the farmers of North Dakota in the aftermath of the drought of 1988. Agronomists at North Dakota State University surveyed the state for crop damage, and using a form of the TAMS model, they were able to project the financial impact. "By being able to define the monetary impact, economists were able to accurately inform national policy makers of the size of the problem and the need that existed. This information was a key to determining the budget for the Drought Assistance Act," says Larry Leistritz.

"Using TAMS, we figured out that our real loss was $3.68 billion," says economist Tim Mortenson from North Dakota State University. He adds, "You better believe this projection and hard data were useful when we asked for relief. We could say, 'See . . . this is how big our problem really is.'"

The TAMS was also used in Deaf Smith County, a once booming agricultural center in the Texas panhandle. Largely because of higher costs of irrigation, agricultural activity was waning. As a result, the community was experiencing population loss and declines in manufacturing, employment, mining, retail trade, and income. Low levels of education and increasing crime rates compounded their problems. Citizens of Hereford, largest city in the county, asked for help.

"We found the area had undergone tremendous growth and change in the last 30 years because of the development of underground irrigation, says John Perrin, Hereford Area Economic Development Council. But spiraling costs of natural gas, used to fuel the irrigation pumps, caused problems. We realized we needed to be less dependent on agriculture."

Hereford officials contacted Texas A&M researchers. The TAMS model once again was applied, this time to project future economies and demographic conditions based on continued low growth, compared to medium or high growth. Ultimately, it provided insight into the likely future conditions in the area if nothing happened to change the course of economic development.

The low growth scenario predicted what would happen if current levels of economic activity continued. The TAMS model projected that this would result in continuing slow decline — employment would drop 25% over the next 30 years, and population would decline 6%. If current trends continued, it was clear additional drops in employment and population would lead to related declines in the business and service structure of the area.

"TAMS really helped us understand where we would be if we stayed on the same track, and also where we could be if we experienced high or medium growth. In a quantitative way, it gave us a look at possible futures based on assumptions. It gave the basis for harder data. One of the results is that when we ask for government assistance, we now have some hard evidence of the impact of development and the lack of it," says Perrin.

The folks of Fayette County, the North Dakota farmers, the leaders in Hereford, Texas, are all a little bit wiser and a little bit luckier than many people. They have information that can help them plan, prepare, and prosper. They've gotten a chance to glimpse into possible futures. **Jeanne Dosch**

Government

Study helps Nevada counties share health costs

A young couple from the Midwest, driving to California in search of work and a new life lower their windshield visors and squint into the setting Nevada sun. Their 1977 Toyota leaks oil and shows signs of a dozen Rust Belt winters. Unless there's a tight grip on the steering wheel, the bald tires tend to drift across the road. The days of driving take their toll on the young man, whose momentary inattentiveness allows the vehicle to roam onto the roadside gravel. He overreacts; the car fishtails, hits a reflector pole, flips three times, and settles right side up.

Fortunately, seat belts save the lives of the young man and woman, but their injuries require they spend a week in an intensive care unit in a Reno hospital. Their stay costs nearly $100,000, but because they had no money and no insurance, the hospital legally bills the county in which the accident occurred. Nearly all costs were eventually covered by the state's Indigent Accident Fund, for which rural counties can apply to cover such instances.

The above scenario is hypothetical, but it's repeated in reality in one form or another hundreds of times each year throughout rural Nevada.

Up until 1982, rural counties were liable for the urban hospital bills and were expected to collect delinquencies from indigents. But Assembly Bill 218 established a levy on the statewide *ad valorem* property tax to cover indigent emergency health care.

"These counties found it difficult to absorb hundreds of thousands of dollars in combined ambulance, local medical, and urban hospital costs annually accrued by indigents," explains Tom Harris, associate professor of agricultural economics at the Nevada Agricultural Experiment Station in Reno. "The counties have a limited tax base: they're sparsely populated, lack industry, and the federal government owns 90% of the land in rural Nevada."

Research conducted by Harris and three colleagues helped Bill 218 pass the legislature by revealing the extent to which emergency indigent health care was financially draining Nevada's rural and urban counties.

They documented this problem by examining the emergency medical services and indigent health care costs for Humboldt County in fiscal year 1981-82. They found that of the 565 ambulance calls made by EMS personnel that year, 225 involved nonresidents, 28 of which were indigent. The indigent bill for ambulance, local care, and out-of-county hospital costs came to $82,560, which the county absorbed — about 20% of its annual health budget. This was a 48% increase over the previous three years.

"Most of these highway accidents involve a high degree of trauma, which the local medical centers can't properly treat," explains Bob Hadfields, executive director of the Nevada Association of Counties.

"So indigents were sent to the intensive care units in Reno and Las Vegas. It wasn't uncommon for counties to receive bills for more than $100,000, which would just about wipe out a smaller county's entire health care budget for the year."

At that time, the legislature had put a cap on the ability of counties to raise taxes, so the rural governments could do nothing but watch as the increasing indigent emergency costs diminished their health care budgets.

Through their Humboldt County study, Harris and his col-

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leagues highlighted the situation and suggested ways of alleviating the indigent health care burden for rural counties and urban hospitals alike. For starters, they suggested a uniform definition of the term "indigent." They also suggested adding a levy to the statewide property tax to pay for indigent ambulance and hospital bills, which was soon thereafter incorporated into Bill 218.

"The work of the research team was invaluable," says Hadfield, who had extensive experience with indigent emergency health care problems as county manager of Douglas County in the early '80s. "If it wasn't for their excellent documentation of the problem in Humboldt County, the legislature would not have enacted Bill 218."

So far, the system has worked "pretty well" according to Harris, but there were some wrinkles left to iron out. "The bill was written only to cover emergency care for indigents injured on the highway, which makes up 30-35% of that total population," he says.

"It doesn't cover people who are injured hitching a ride on trains, for example. And it doesn't cover people at work. It's not like the Midwest; there isn't much manufacturing in Nevada, with unions and health care coverage. Most people here are self-employed and many are under- or uninsured. In rural areas, it's agriculture and mining. We've had a boom out here recently in mining. Many people are coming here looking for work, and many are uninsured. Many elderly people who have gotten by so far without insurance are adding to the overall indigent emergency care costs as well.

Statistics show Harris these problems are going to continue and that one way or another, the people of the state of Nevada are going to end up paying for them. He just wants to make it more equitable, to spread the cost around so that one particular county isn't going to bear the brunt of indigent emergency care cost.

Hadfield agrees. "The counties want to be responsible," adds Hadfield. "As employers, we want to cover our own costs as much as possible, which we believe will help keep medical costs down everywhere. We just needed the OK from the legislature for us to help ourselves."

Both got their wish when the legislature recently passed Assembly Bill 45, which increased the indigent medical levy 1.5 cents and allowed counties to adjust their taxes to cover resident health care costs. **Marc Kennedy**

Ag economists find better way to distribute state funds

New York State's government officials were faced with a problem. The state's local governments were under considerable fiscal pressure due to lost Federal Revenue Sharing funds, and these governments viewed the state's general purpose aid to municipalities as both insufficient and inequitably distributed.

Enter agricultural economics researchers at Cornell Agricultural Experiment Station. To provide firm data to use in calculating fund distributions, the researchers first tackled the mammoth task of cataloging the variety of services provided by local governments and how these services are financed.

The data were used to develop an innovative approach for estimating service cost functions. This information, in turn, was used to predict the cost of providing standard levels of 16 services for each local government in the state. The state can now "try out" various policy options for allocating general purpose state aid to local governments.

Research in this area continues, with current emphasis on the following: 1) determining whether service cost structures differ by size of jurisdiction, 2) determining which services exhibit economies of size, and 3) identifying contiguous jurisdictions likely to benefit by consolidation of services.

Researchers analyze solid waste collection methods

How do you best handle solid waste in rural areas? Agricultural economists and rural sociologists at the Tennessee Agricultural Experiment Station at Knoxville studied four rural Tennessee counties to answer this question.

Due to its dispersed population, solid waste collection costs can be a major expense for rural counties. At the same time, collection points must be convenient and aesthetically acceptable to entice residents to properly handle solid wastes.

The Tennessee researchers studied two potential methods of handling solid waste: the green box system and the convenience center system. The green box system utilized large green containers located at 50 or more sites throughout the county. No attendant was present at the sites. The convenience center concept reduced the number of disposal sites to between four and ten fenced locations operated by an attendant.

After analyzing data on comparative costs and aesthetic benefits of the two collection systems, the researchers found the convenience center system superior. Annual waste collection costs to the counties using convenience centers decreased between 13% and 51%. County officials concur that the centers also increased the attractiveness of the county to residents and tourists.

Education

Study links education and economic development

"I think our county has been left out in terms of economic development because of our old school."

When you look at it, you simply see a sagging, archaic structure. It's a school.

This old building, located in rural Charlotte County, Virginia, is worn out by time, weather, and the thousands of students who have passed up and down its halls these past 60 years.

Look around and you'll see a school that has buckets catching the cold rain as it falls indoors as well as out. You'll see poorly lit hallways, an exhausted gymnasium, high ceilings, and creaky floors. You'll see no modern facilities. None. It's not a pretty picture is it?

But here's something you don't see when you look at this school. You don't see the impact that this school has on potential manufacturing companies, factories, and industries who may have an interest in locating in Charlotte County. Is it likely they will find this school attractive? No. Is it possible that they will decide against locating their facility here because the school appears inadequate? Maybe.

These questions are the crux of new research in the field of education and economic development. Researchers theorize that money spent on the structure, which ultimately is money spent on the student, will have a significant impact on future area economic development.

Though this research is in early stages, here's what social scientists are learning. According to Kevin McNamara, Assistant Agricultural Economics Professor and Rural Development Economist at the Georgia Agricultural Experiment Station, "We found that after a 10% increase per pupil expenditure, the student had an 8 to 10 point positive impact on achievement scores. Also, where we looked at Scientific Research Association (SRA) scores (a standardized achievement score), the higher the scores, the higher the likelihood of a company locating in the area."

McNamara adds, "If we look at math, the percentage of teachers with masters degrees in a school was significantly related to student math achievement. And in reading, the lower the pupil-per-teacher ratio, the better the reading scores were."

So, following this theory, it is clear that one way to enhance a community's economic development is to improve the schools by investing money in students, facilities, and teachers. "If you increase funding to a school, it has a positive impact on school quality and student learning; which, in turn, increases the probability of attracting industry," says McNamara.

It's hoped that this theory will be tested in the case of the antiquated middle school in Charlotte County, Virginia. Says Sue Raftery, rural sociologist with the Southeastern Education Improvement Lab, "At this writing, a feasibility study has suggested that $6 million is required to build a new middle school for the 600 sixth through eigth graders who would use the facility."

Paul Stapleton is the Superintendent of Schools of Charlotte County, a county so rural that it doesn't have a stoplight and has only one restaurant. Stapleton's observations ally with hypotheses of social scientists. "While lumbering is a big industry, and a few plants dot the county, there is not much promising in the way of economic development. I think our county has been left out in terms of economic development because of our old school. We can see what has happened in other surrounding communities. There has been a surge in growth due to lots of things, but I also believe that the better schools in other counties have attracted factories."

Stapleton says he's felt the sting of rejection by industries who have turned up their noses at the ailing middle school. "It's true that potential industries come here and they take a look at our school. They make value judgments and decide that since this school is so run down, we don't take pride in our school, and that our education is inferior. They also look at the school as the place where their future potential employees will be educated. Because they are not impressed with what they perceive to be the quality of education, they don't want much to do with the community."

"It's really a Catch 22," says Stapleton. "We need to improve our tax base so we can improve our schools. But we can't attract business because of our poor school, so it's hard to improve the tax base." Stapleton offers this added twist for having more local industry, "I think that if a firm located here, some students would be more motivated to learn because they'd have a potential employer waiting."

In Charlotte County, Virginia, the teachers, students, parents and Paul Stapleton wait. The School Board has approved the $6 million for the new school and now word must come from the State Board of Education. Social scientists are anxious to apply theory to practice in this southern school. If predictions hold true, the school could have a positive impact on the students as well as the economic climate of scenic Charlotte County. A very positive impact.

Jeanne Dosch

Study focuses on rural adolescents

Two Cornell Agricultural Experiment Station researchers are focusing on the state's rural adolescents. D. Hedlund and R. Ripple in the Department of Education have initiated the Program on Rural Adolescent Development (PRAD). The study will follow a sample of rural adolescents through their high school years into adulthood to learn about the influences of family, school, the community, and social group.

Substudies of PRAD will investigate career decision making, school motivation and dropping out of school, attitudes and knowledge about alcohol and drug use, and attitudes and knowledge about reproductive health and sexuality.

Model preschool program underway

The Rural Area Model Preschool Project strives to provide quality social and educational experiences for handicapped children living in rural communities in eastern Washington.

Project director Sherrill Richarz, who is with the Department of Child and Family Studies at Washington Agricultural Research Center, says rural districts need to provide viable, quality, and cost effective programs for handicapped children, a group that has increased by more than 100% from 1982-1985.

To this end, she designs programs to meet the specific needs of each community. These programs help eliminate the need to bus children to other districts, thereby saving transportation costs and travel stress on the children and their families.

The unique aspect of her approach is that it uses a strong base of local, social, and political involvement and ensures long-term support for this mainstreaming.

During the first year of the three year program, Richarz analyzed the social and ecological factors affecting these preschool programs. She also trained teachers and child care providers to work with all children and develop activities that would demand interaction between handicapped and nonhandicapped children. Additionally, she produced a newsletter to support and promote these preschools.

Balancing work and family

Sweeping changes have transformed the structure and character of the American family in recent years. In more than half of all American marriages today, both husband and wife work outside the home. This increasing number of dual-income families, combined with the rise in the number of single-parent families, has affected the reciprocal relationship between the domains of work and home. Individuals are often torn between work and family commitments.

To keep in step with these transformations, Iowa Agricultural Expermient Station researchers in the Department of Family and Consumer Sciences Education investigated ways in which secondary education home economics curricula could be updated.

Nealry 300 secondary teachers in Iowa completed a quesitonnaire including 50 work and family concepts. From the survey results, the researchers could focus on the topics teachers consider important. These topics include family and home satisfaction, job demands and expectations, decision-making and problem solving, time management, financial management, getting along with others, positive self-identity, acceptance of responsibility, choosing an occupation, and developing good work habits and attitudes.

Researchers used the survey data to develop a model work and family curriculum for middle and high school programs in Iowa. Project staff developed lessons in four topic areas —work and family lifestyle choices, balancing work and family roles, work influences on family life, and family influences on work life.

The revised curriculum was disseminated to all secondary vocational home economics teachers in the state at a recent conference. In service workshops are being developed so that teachers can more effectively utilize these materials.

The "Vandalism Game"

Nebraska Agricultural Experiment Station researchers help their state's youth play the "Vandalism Game." The researchers are not promoting crime. The Vandalism Game is an educational tool to help youth respect property and reduce the incidence of vandalism.

Program development was prompted by statistics that about 2,000 Nebraskans are arrested for vandalism each year, most of them youth. Since this is a crime that often goes unreported, the actual number of incidents probably exceeds that number many times. Also, victimization studies have shown that property damage associated with vandalism is the type of incident Nebraska residents most often encounter.

Targeted for 5th to 8th grade students, the Vandalism Game covers five lessons. Each lesson includes basic facts or concepts and experimental exercises and

activities. Special emphasis is placed on activities groups may use to investigate school or neighborhood vandalism.

Each year up to 3,000 youth participate in the program, which is available through youth groups, educational organizations, and law enforcement agencies.

Videos help teach math

Our national crisis in science education is getting worse, feels one official with the National Science Foundation. A recent comparative study of students from 17 countries showed America's youth ranking last in biology and 15th overall.

Educators at Purdue's Agricultural Experiment Station are aware of the problem and have plans underway to improve the situation.

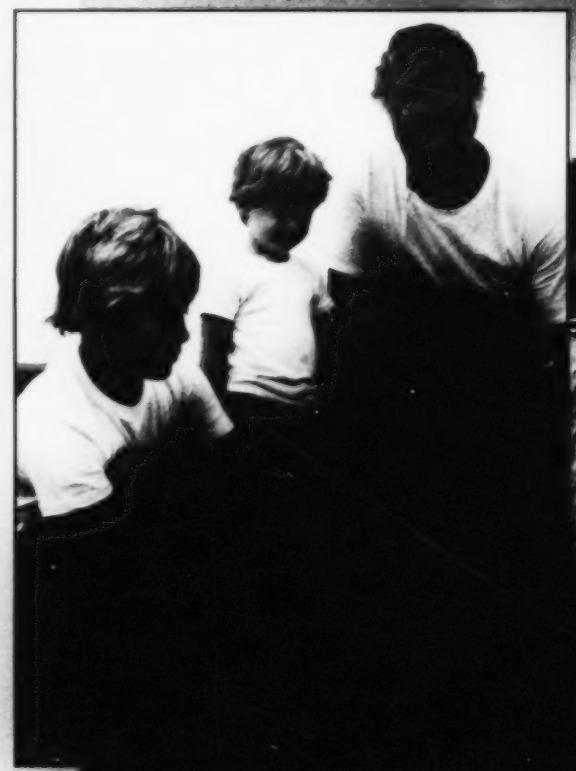
For the past several years university leaders were aware of a disturbingly high percentage of new students having difficulty with college-level math and science courses. In response, they have established a number of pilot programs designed to improve teaching of these subjects at the grade school and high school levels.

The newest program is the Purdue Academic Learning Opportunity System (PALOS): Mathematics, being set up at 21 sites throughout the state.

PALOS uses an interactive video disk system to develop an individual remedial mathematics program for each student. The program is available at elementary and high schools, technical school campuses, community centers, colleges, and career development centers.

Family

Researchers help farm families in crisis



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The farm crisis of the 1980s forced many rural families to give up not only their land, but their way of life as well.

How did these families cope with the changes? Missouri Agricultural Experiment Station rural sociologists William and Judith Heffernan went to the heart of the question by conducting a study of families being forced from their farms for financial reasons.

In 1985, they received a call from the Department of Agriculture. The House Agriculture Committee was seeking information on what was happening to farm families being forced from their farms. It was known that losing a farm devastated not only individual family members, but adversely impacted the rural community as well.

Funded through the Economic Research Service of USDA, the study by the Heffernans sought to learn more about the process of losing a farm, as well as determine the special needs of such families and the assistance they received.

The rural sociologists spoke with 40 families from one of the more agriculturally productive counties in Missouri. All had lost their farms between Jan. 1, 1980, and Jan. 1, 1985.

Rural communities are often depicted as pulling together in times of crisis. But the Heffernans found the farm crisis was more likely to tear communities apart. "People around here just stood by waiting to see if we would starve to death, and we almost did," said one individual.

The Heffernans found only five of the forty families interviewed recalled any assistance they received from government agencies, churches, or any other organization in the community.

Although it seemed the families had nowhere to turn, assistance was available. There were county programs for food stamps, commodity foods, and health assistance. Families had access to job retraining programs and similar services. Churches and other groups within the community were concerned about the social well-being of community members. Why then did so few farm families find the assistance they needed?

The Heffernans found that the majority of the family members going through the process of losing their farms experience depression. Withdrawal often accompanies such feelings so that at a time when individuals and families were facing a crisis, they also had a tendency to withdraw from the people and community around them.

"They were accustomed to taking care of their own needs. Many of them were ideologically opposed to many of the social service programs because they felt they helped those unwilling to work," explains William Heffernan.

The Heffernans concluded that such individuals did not have the psychological or emotional strength to ask for assistance. Yet essentially all social service, educational, and other assistance programs required people to reach out and ask for help.

If farm families were going to be helped through such a crisis, then assistance programs would have to be changed to reach out to those in need.

The Heffernans recommended several areas be pinpointed for assistance to farm families: rural economic development; mental health outreach; information service; job certification, networking and training; changes in requirements of entitlement programs; and the needs of rural youth.

Results from the Missouri research and information gathered from similar studies in other states were used by members of Congress in drafting Section 1440 of the Food Security Act of 1985. This legislation was developed to provide funding for assistance to distressed farm families.

In 1985, when the House Agriculture Committee first sought information on farm families in crisis, very little research was available. But because of the Missouri research and similar studies, that information base has been greatly enhanced, according to William Heffernan.

The Department of Labor's Displaced Farmer Program, religious organizations, schools, health care organizations, and many other groups used the research as the basis for ensuring their programs were effective in meeting the needs of the rural population.

At stake is more than the well-being of farm families having lost their farm, conclude the Heffernans. They say depression experiencd by such individuals can spread throughout the entire rural community.

"In many parts of our state, we see small communities which have given up. There is a sense of helplessness, hopelessness, and futurelessness within these communities. This is often the result of what we might call collective depression," they say.

Rural development is the only hope many rural communities have for survival. But more effort is needed to revitalize the rural economy. Research and information can provide the necessary fuel to move the rural economy toward a brighter future.

Lori Schieldt

Family

Book assists those who help farmers

Farm families with financial difficulties often find themselves psychologically isolated in their communities. Minnesota Agricultural Experiment Station researcher Paul Rosenblatt's forthcoming book, "Farming Is In Our Blood," helps individuals who work with these families better understand the roadblocks to rehabilitating them and their communities.

One issue the book addresses is the social psychology of family isolation. "Families in serious trouble often do many things that lead to their isolation from the community", says Rosenblatt. "The community does many things, some of them very well meaning, that isolate these families."

Psychologists who work with farm families have used Rosenblatt's research findings to construct stronger support groups for farm families in serious economic trouble.

Also, an extension program now being used helps mediators better understand the dynamics of farmer/lender mediation sessions. Additional extension programs based on this research are in the works.

Disabled children learn to help themselves

The results of a study of developmentally disabled children in Kauai, Hawaii, has helped improve their care and reduce public costs.

Researchers in the Unit on Human Development and Family Studies at the California Agricultural Experiment Station at Davis examined the patterns of successful development of rural, low-income children from birth to maturity. Through their analysis, the researchers sought to identify when and what kinds of intervention reduce long-term dependence.

As a result of the research, a new program was developed to assist developmentally disabled children. Now fewer children rely on public assistance, and those requiring assistance do so for a shorter period of time.

Researchers promote child passenger safety

The efforts of a Tennessee Agricultural Experiment Station research team to make automobile travel safer for children has saved many lives. In 1978 Tennessee became the first state to pass legislation requiring children under age four to be properly restrained while riding in a motor vehicle. Earlier research had estimated that fatalities could be slashed 90% if such devices were used.

The problem facing the state was how to convince the public to use child restraint devices. To fill this information gap, a team of university researchers developed the Tennessee Child Passenger Safety Program with joint funding from the state and federal governments.

The team first set three broad goals: publicize the law, educate people in the state about the importance of child restraint devices, and evalute the effectiveness of these efforts and the overall impact of the legislation on reducing deaths and injuries to young children.

As a basis for their educational

efforts, the researchers collected information on the public's current knowledge, attitude, and use of child restraint devices. With this data in hand, the team planned their educational strategy, which included general public awareness, preschool curricula, parent education programs, and restraint loaner programs.

The Tennesse program has proved to be effective, with the bottom line showing fewer deaths and injuries to young children.

Various components of the program have been refined and institutionalized on a permanent basis in the State Department of Health and Environment. Data from the research were also used to eliminate a loophole in the law that allowed an older passenger to hold a young child in his or her arms. Researchers found this practice to be unsafe.

Housing options for rural elderly examined

Rural elderly in New York have received a helping hand from Cornell University researchers. With financial assistance from the Cornell Agricultural Experiment Station and other federal agencies, the researchers have helped highlight housing problems the rural elderly face.

Many rural elderly would like to move to different housing more in line with their needs. However, many are "locked in" their present housing mainly because they lack suitable alternative options.

After the Cornell researchers measured the extent of the problem, they worked on some solutions. They have designed educational and training materials to inform the elderly of their housing options. Local community leaders are told of the roadblocks local zoning ordinances and other planning devices create for elderly housing development. Also, an extensive training network working through the Cooperative Extension system has reached thousands of individuals in positions to improve elderly housing.

The research on housing choices and options for the elderly includes a look at long-term care and housekeeping services for frail elderly who wish to remain living independently. This is particularly important in rural areas where formal services are often less available.

Human service evaluations benefit small town families

Evaluating human service programs offered in small towns can have a positive effect on the entire community. Research conducted by Jennifer Greene at Cornell Agricultural Experiment Station helped one town improve its youth employment program and its child care information and referral service.

Green's evaluation research results helped the community make policy or program decisions to:

- Permanently increase staff resources for the youth employment program.
- Add a job training component to the youth employment program.
- Redirect publicity and outreach campaigns for youth jobs toward the local small business community.
- Add a training requirement for child care providers to the child care program's registration guidelines.
- Strengthen and expand the agency's activities emphasizing the quality of child care and provider training.

In both programs, the evaluation results were further used to develop and justify funding proposals. Plus, the evaluation process itself served to enhance both programs' visibility and prestige within the community.

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